R E P O R T R E S U M E S

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EFFECTS OF COOPERATIVE OVERHEAD PROJECTION MASTER DEVELOPMENT. AN EXPERIMENT IN USE OF A SUMMER WORKSHOP TO STIMULATE DEVELOPMENT AND USE OF VISUAL AIDS BY VOCATIONAL AGRICULTURE TEACHERS.

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WASHINGTON STATE UNIV., PULLMAN

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THE PURPOSE OF THIS PROJECT WAS TO TEST THE EFFECTS OF INVOLVING VOCATIONAL AGRICULTURAL TEACHERS IN THE DEVELOPMENT AND EXPERIMENTAL USE OF INSTRUCTIONAL MATERIALS. A GROUP OF 16 TEACHERS AT A SUMMER WORKSHOP PARTICIPATED IN PLANNING THE CONTENT AND DESIGN FOR 13 OVERHEAD PROJECTION MASTERS AND MADE PLANS FOR USING THEM EXPERIMENTALLY. THE TEACHERS ALSO AGREED TO EXAMINE THEIR INSTRUCTION PROGRAMS AND TO SEND THE PROJECT DIRECTOR SUGGESTIONS ON CONTENT FOR OTHER USEFUL PROJECTION MASTERS. AT THE TIME OF REPORTING, THE MATERIALS WERE BEING USED BY 14 OF THE 16 TEACHERS. SEVEN SIGNIFIED A DESIRE TO ATTEND ANOTHER INSTRUCTIONAL MATERIALS DEVELOPMENT WORKSHOP. REPRODUCTIONS OF THE PROJECTION MASTERS WERE INCLUDED. THIS VOLUME REPRESENTS PART 11 OF THE 13-PART FINAL REPORT ON THE VOCATIONAL-TECHNICAL EDUCATION RESEARCH AND DEVELOPMENT PROJECT OF WASHINGTON STATE UNIVERSITY. RELATED VOLUMES ARE ED 010 652 THROUGH ED 010 664. (TC)

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Repost No. 11

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An Experiment in Use of
a Summer Workshop to
Stimulate Development and
Use of Visual Aids by
Vocational Agriculture
Teachers

November 30, 1966

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An Experiment in Use of a Summer Workshop to Stimulate Development and Use of Visual Aids by Vocational Agriculture Teachers

Project Number EDR-257-65
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Joel H. Magisos and Stanford Sleeth

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Department of Education, Washington State University, Pullman, Washington
State Board for Vocational Education, Olympia, Washington

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We wish to acknowledge the contributions of the Washington State Board of Vocational Education made to financing the conference at which these materials were conceived. We recognize the thought and work of the Vocational Agriculture Teachers who contributed ideas and are using the projection masters experimentally.

Special appreciation is due Ernest G. Kramer, Assistant State Superintendent for Vocational Education and Bert Brown, State Director of Agricultural Education.

We thank Ranae Rantanen and Marilyn May for thoughtful editorial work and patient retyping of this manuscript.

INTRODUCTION

Purpose

The purpose of this project is to ascertain the effects of involving teachers in development of visual instructional materials.

For decades vocational educators have utilized various devices to actively engage teachers in improvement of curricula and instructional materials.

At present, in circumstances which cause rapid change in requirements for successful work, wide-spread teacher participation is of unprecedented importance.

Related Research

Vocational teacher supervisors seeking to stimulate curriculum development and use of modernized instructional materials have long recognized the values of involvement. Psychologists and sociologists have researched processes by which involvement increases interest and a sense of identification with new developments and a desire to participate in their use. Curriculum supervisors have explored arrangements and processes designed to enlarge dimensions of participation in developmental processes.

The rationale for this experiment was derived from research indicating the influence of group effort and resultant group relationships on (1) participation, (2) the sense of identification derived from participation and (3) the effects of participation and personal identification on use of innovations.

The research and observations of Katz and Lazarsfeld,[1] Cohen,[2] Sherif and Hovland[3] indicate that cognitive and personal involvement in a process (1) enlarges peoples' sense of identity, (2) increases their comprehension, (3) stimulates purposeful personal effort and (4) activates a will to pursue purposes derived from consensus of group thought. Zander and Medow[4] add evidence that improvements of performance impell individuals and groups to continue sustained efforts to make further improvements.

This experiment was designed to test the degrees to which such interpersonal group-oriented relationships could be utilized to stimulate development and utilization of visual aids by vocational agriculture teachers. It was

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[1]Katz, Elihu, and Paul F. Lazarsfeld, Personal Influence, Free Press, 1955.

[2]Cohen, Arthur R., Attitude Change and Social Influence, Basic Books, 1964.

[3]Sherif, Muzafer, and Carl I. Hovland, Social Judgment, Yale University Press, 1961.

[4]Zander, Alvin, and Herman Medow, "Individual and Group Levels of Aspiration," Human Relations, 16:89-104, February 1963.

hypothesized that group work on development of overhead projection masters would activate use of those devices and enlarge interest in development and use of related materials.

METHOD

State supervisors discussed the values and potentials of visual aids with vocational agricultural teachers. On the basis of teachers' suggestions the supervisors prepared preliminary versions of the overhead projection masters reproduced in this report. These items served as a partial basis for a one-week workshop sponsored by the State Board for Vocational Education at Washington State University during the summer of 1966.

At the workshop 16 teachers:

1. Critically examined the substance and design of the graphics.
2. Made suggestions for improvement.
3. Exchanged views about ways modified versions might best be used.
4. Formulated plans for experimental use of modified versions.
5. Suggested other content that should serve as a basis for development of additional materials of similar nature.
6. Were led by supervisors to explore means of combining the use of projection masters, programmed materials and other teaching devices into instructional systems.
7. Formulated preliminary plans for a 1967 summer workshop.

On the basis of agreements reached by workshop members, visuals were revised and provided to each member for experimental use during the 1966-67 school year.

The following information about ways of reproducing projection masters for local use were provided and discussed by workshop members.

Plastic

Any of the following three materials can be used for tracing the masters directly on plastic.

1. China marking pencils, plastic inks or felt pens may be used on clear acetate of .005 or .010" thickness.
2. Treated or coated acetate permits the use of transparent colored drawing inks and lettering aids.
3. A fine tooth frosted (matte) acetate permits the use of inks, felt pens, and transparent colored pencils. A clear plastic spray should be applied carefully and lightly on the frosted side on which the tracing has been placed.

Heat Sensitive Film

The use of heat sensitive film to produce transparencies permits completely dry and immediate results. The film is placed directly on the master and infra-red light is passed through the film to the master. The dark portions on the master absorb the heat and the increased temperature affects the film and produces the images. Actually, the process is as simple as following the manufacturer's directions in placing the film on the master and running the two through a dry copy machine (ie. Thermofax).

Photocopy Film

This procedure, involving a reflex exposure, is a contact photographic process usable in subdued room light. Light is passed through the negative film and is reflected back from the lighter surfaces of the master to expose the negative. Placed in contact with positive film and developed in a chemical solution, a positive transparency is produced. A copy machine, negative and positive films, and a chemical solution are necessary.

Diazo Film

Transparencies may be produced in ten brilliant colors by use of dye coated diazo films. Exposure to ultraviolet light chemically changes the dye coating so that no image will appear on the exposed surfaces when the film is developed in ammonia fumes. Ultraviolet light is passed through a translucent master to the film. Ink images on the translucent master shield the diazo film. When developed the film will reproduce the image in colors corresponding to those on the master. Diazo film is developed in a jar or tank in which ammonia has been allowed to evaporate. By the diazo process overlays may be produced in colors different than those of the basic transparency.

The masters reproduced in this report are suitable for diazo processing. Other techniques are constantly being developed by commercial firms.

EXPERIMENTAL USE OF TRANSPARENCY MASTERS

Transparency masters may be utilized by the teacher in a variety of ways. The flexibility of use of the transparency master is probably as diverse as the talents of the teacher using it. Described herein are several suggestions for use of the overhead projection transparency master.

Presentations

Most teachers will first use transparency as an aid in the presentation of

material to a class. The masters in this initial series are arranged in sets allowing the preparation of a basic transparency to which may be hinged one or more overlays to illustrate special features, teach nomenclature. These sets can also be used for drill, review or testing.

During its use any transparency may be modified with the use of a wax pencil, felt pen, or special overhead pencil. During a presentation the teacher may mark, shade, draw or write on the transparency. This can be done on a cover sheet of clear acetate to avoid leaving permanent scratches on the transparency. The clear acetate cover sheet may be cleaned and reused.

The transparency may be presented in consort with other media. For example, a movie projector or filmstrip projector might be focused on the same screen prior to the presentation and used at an appropriate time in the sequence.

Spirit Duplicated Copies of Masters for Student Use

Spirit duplicated copies of masters may be produced by a thermal transfer process in a dry copier (ie. Thermofax) and multiple copies prepared on a spirit type duplicator. These multiple copies of the overhead projection transparency masters will afford the teacher with the opportunity of providing each student with a copy of the material being presented on the screen. Thus, each student can label, take notes, review and test himself. When overlays are involved, an additional spirit duplicating master might be prepared for each overlay, possibly in different colors, and used to develop a multi-colored multiple copy.

Self-instruction

Students may use the overhead projection transparency on the machine themselves (individually or in groups) for enrichment, remedial or study purposes.

Chalkboard and Display Patterns

An overhead projection transparency may be used to project an enlarged image on a chalkboard so that the teacher might work up a satisfactory sketch or diagram for variety or for referral when using the overhead projector for other purposes in the same presentation.

As a means of preparing displays for fairs, bulletin boards and posters, the transparency is appropriate for the projection of an enlarged image which can be quickly traced with accuracy. The distance of the projector from the paper may be adjusted to enlarge or reduce the size of the image. The opaque projector is also suitable for this purpose, especially in projecting material not prepared as transparencies.

Review and Testing

Some of the items presented here include an overlay which provides a set of numbers. These numbers may be used in reviewing nomenclature without the benefit of the labels (on another overlay). The teacher may wish to use these numbers for testing of the students' knowledge of the nomenclature. If so, he should avoid using the numbers prior to the test as students may have a tendency to memorize numbers rather than parts. Additional sets of numbers may be prepared with pencil or pen on clear acetate.

RECOMMENDATIONS

In view of the above apparent results the author and the Project staff recommend that State and local vocational teacher supervisors:

Consult with researchers and advisory committees to identify areas in which need for development and use of up-dated instructional materials is urgent.

Discuss needs and developmental procedures with teachers.

Organize and conduct workshops at which teachers can participate in development of new materials

Cooperate with State Departments of Vocational Education and Regional Educational Research Laboratories and publishers to arrange wide-spread dissemination of materials so developed.

RESULTS

Fourteen of the 16 teachers who attended the summer workshop have reproduced and utilized the overhead projection masters reproduced in this report.

Eleven of the 14 have already made suggestions for further improvement.

Nine members of the workshop group have suggested development of similar masters in areas of genetics, animal nutrition, plant nutrition, tree pruning, landscape design, forest trees, forest cruising and welding symbols.

Seven members have signified a desire to participate in a 1967 summer workshop organized to develop comprehensive instructional systems. That workshop is scheduled to be held at Washington State University. Some members will continue work on development of additional overhead projection masters.

Some will participate in development of programmed materials. Others indicate tentative desires to work on objectives and materials for comprehensive instructional systems.

Apparently, workshops providing opportunity to work on instructional materials related to expressed interests of teachers evoke substantial amounts of effort and broaden concepts of instruction.

DISCUSSION

Preliminary results indicate that vocational agriculture teacher participation in development of visual aids increases use of such aids and activates wide-spread effort to develop additional aids. The effects hypothesized on the basis of the research and concepts of Katz, Lazarsfeld, Cohen, Sherif, Hovland and Zander appear to materialize from workshop activities. To the degree that such is the case instructional materials workshops offer promise as means of engaging large numbers of vocational teachers in the analytical thought processes necessary to keep instruction congruent with swiftly changing needs. Such efforts can also contribute to substantial and wide-spread enlargement of vocational teachers' capabilities to meet modern needs.

SUMMARY

The purpose of this project was to test effects of involving Vocational Agricultural Teachers in development and experimental use of instructional materials.

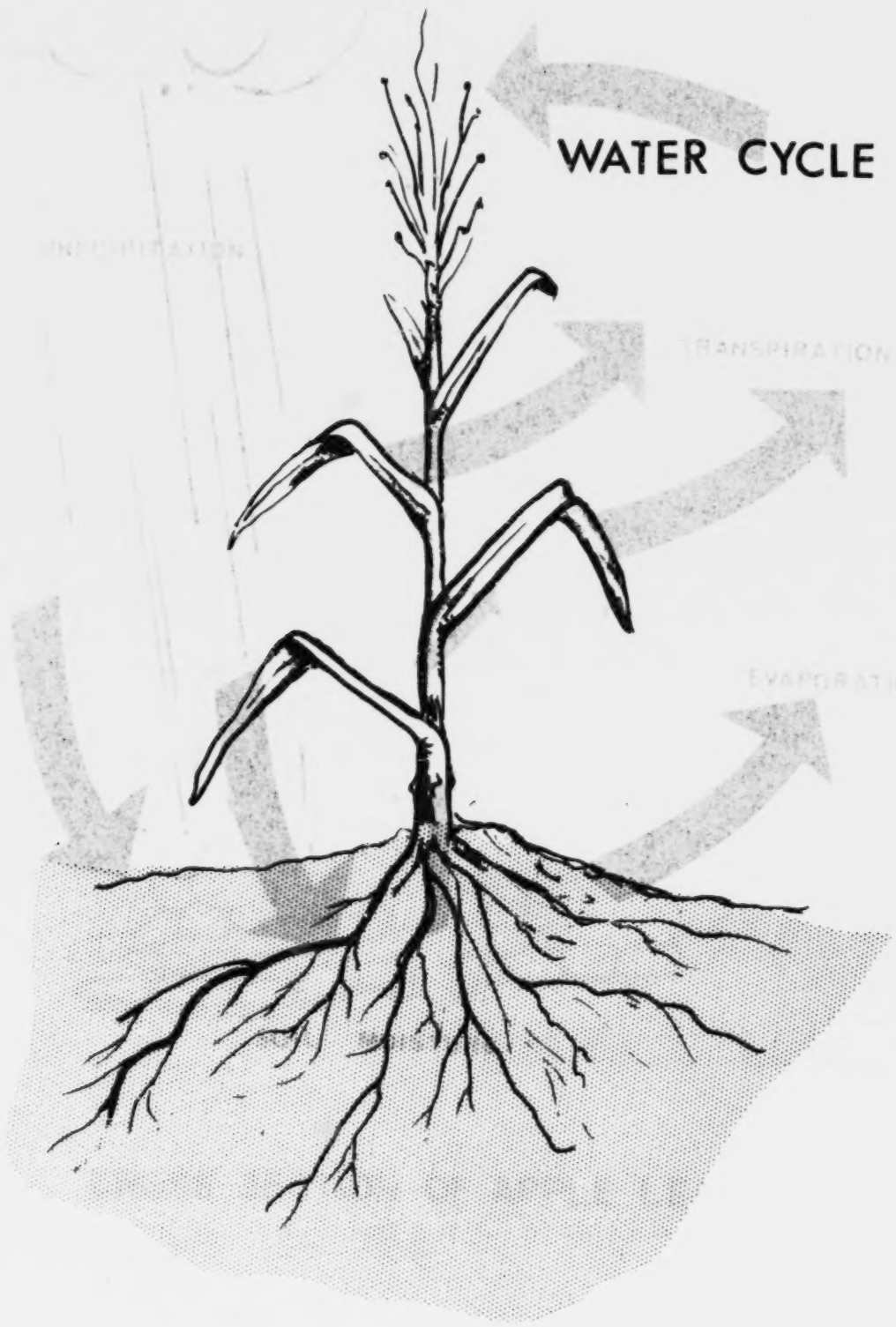
A group of 16 teachers at a summer workshop, participated in planning content and design for 13 overhead projection masters and made plans for using them experimentally. They also agreed to examine their instruction programs and to send the project director suggestions for content for other useful projection masters.

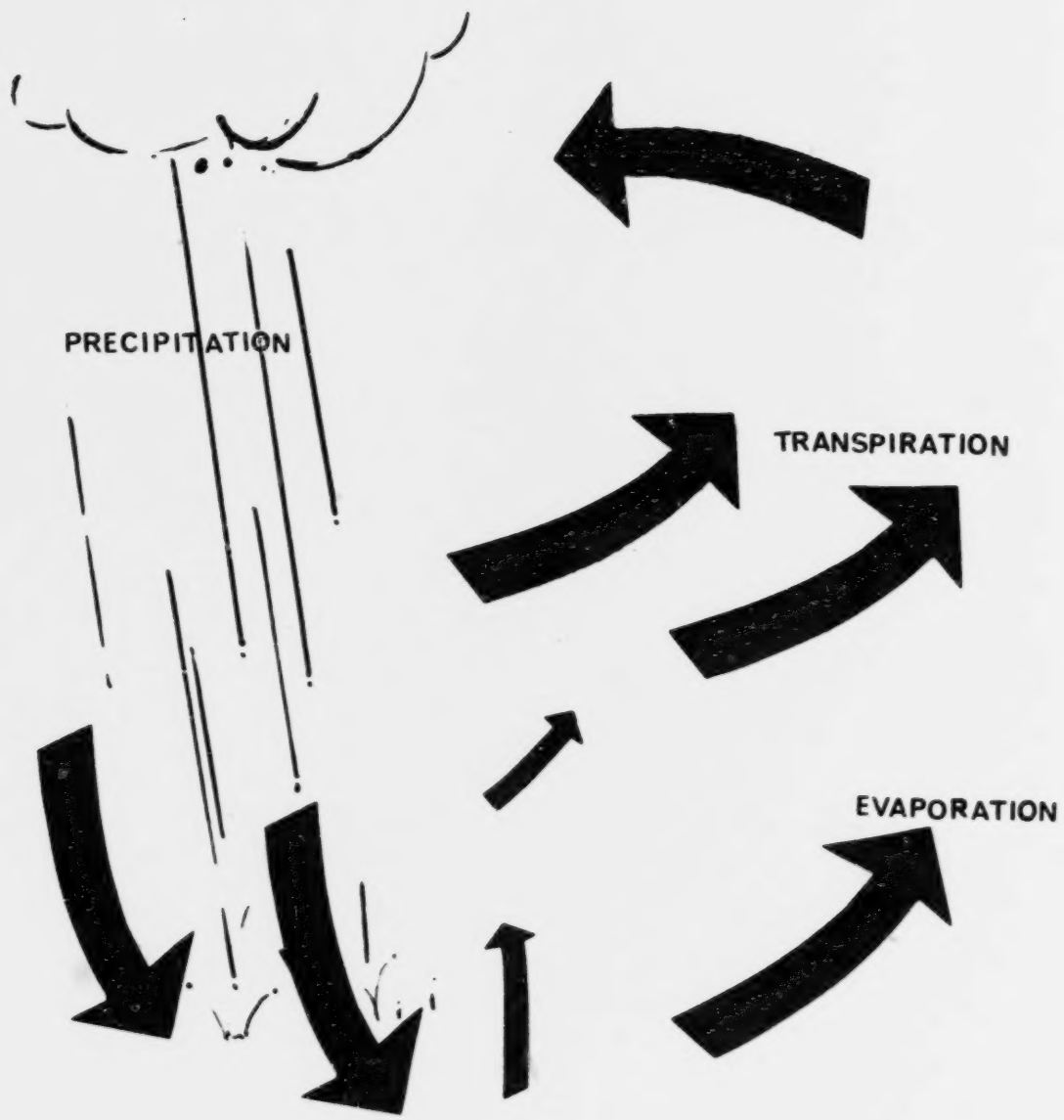
Fourteen of the 16 teachers are presently using the materials in experimental fashion. None have provided suggestions for development of other projection masters. Seven have signified a desire to attend another instructional materials development workshop.

THE PROJECTION MASTERS

Reproductions of the projection masters follow.

WATER CYCLE

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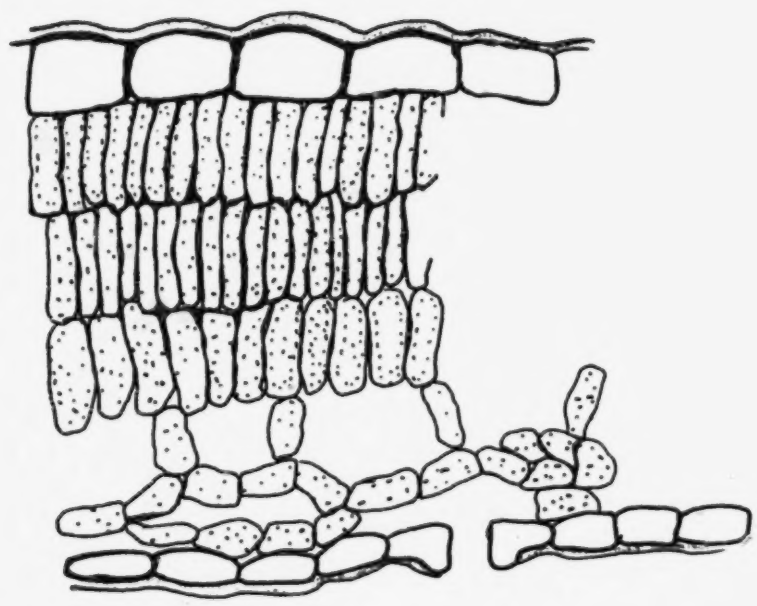
TRANSPIRATION
EVAPORATION
SOIL MOISTURE



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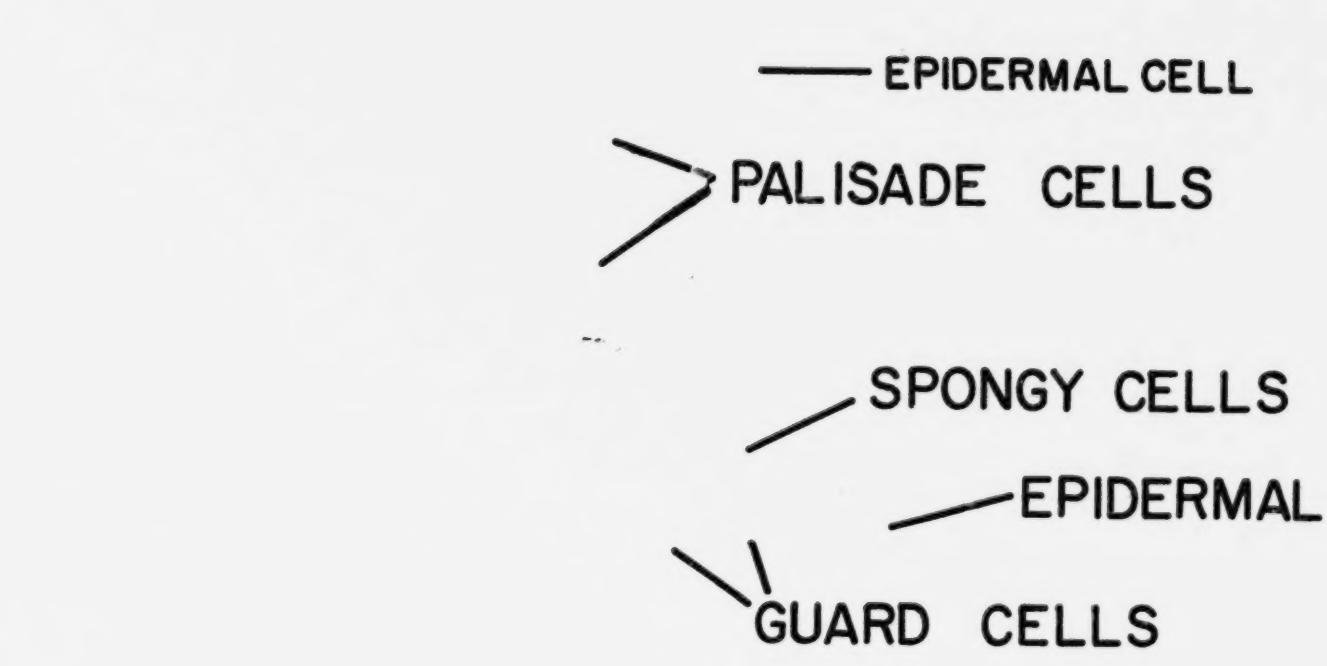
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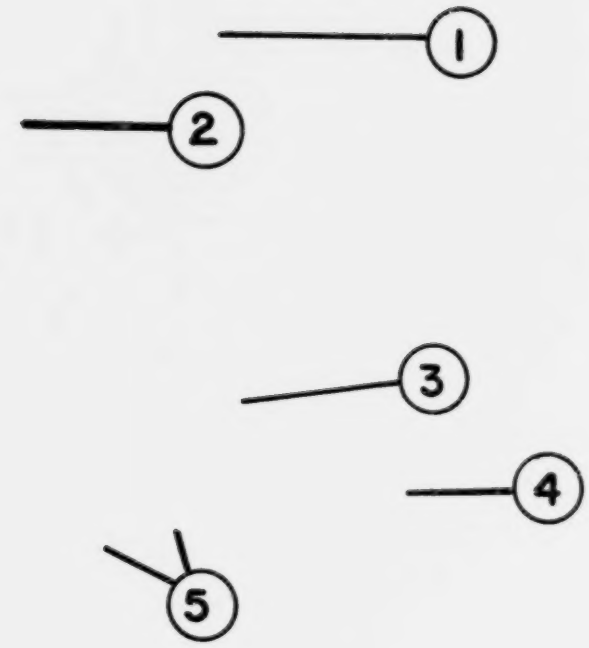
PALISADE CELLS
SPONGY CELLS
EPIDERMAL
GUARD CELLS



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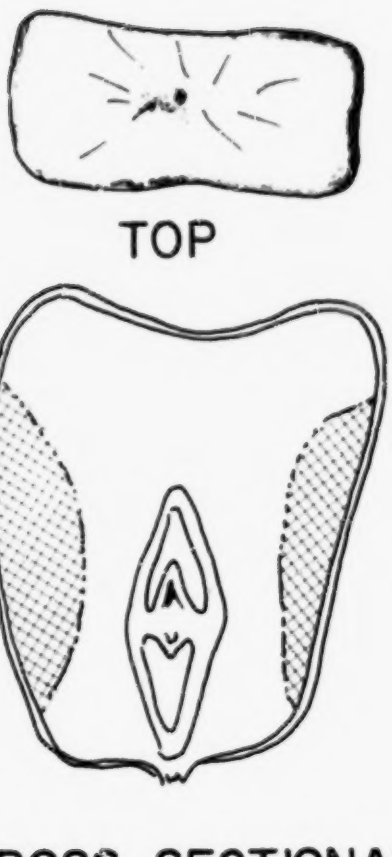
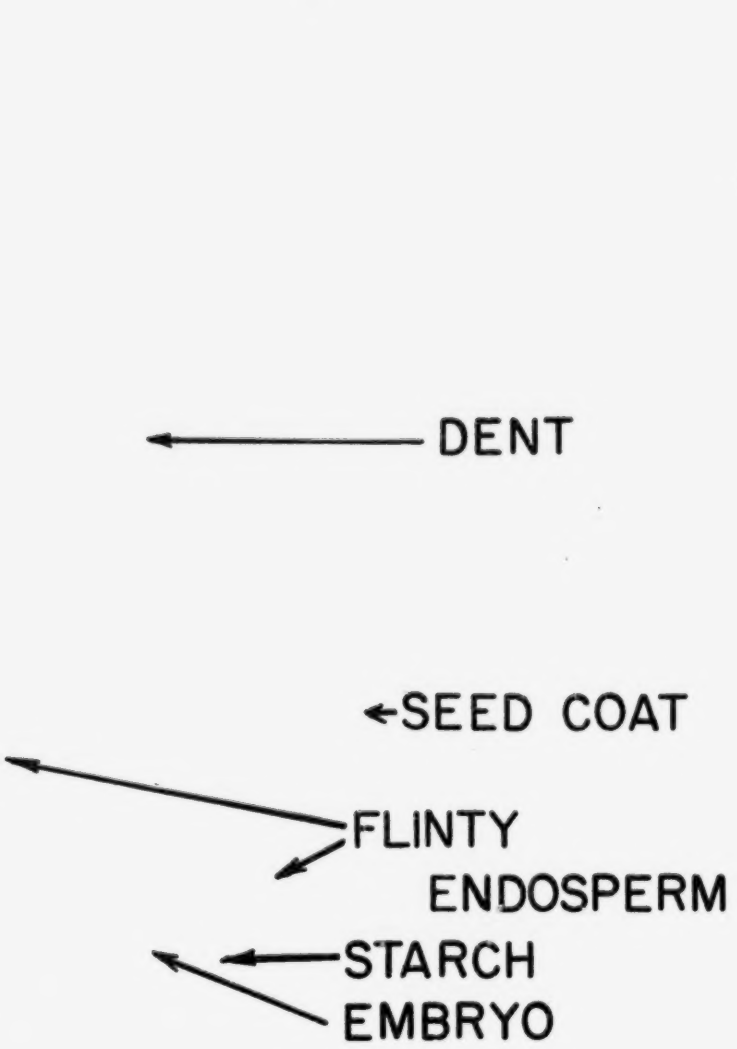


TOP

CROSS SECTIONAL VIEW

CORN


DENT
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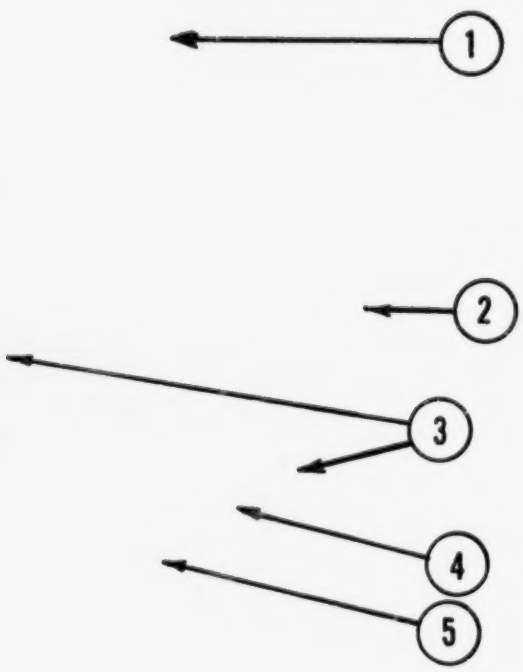

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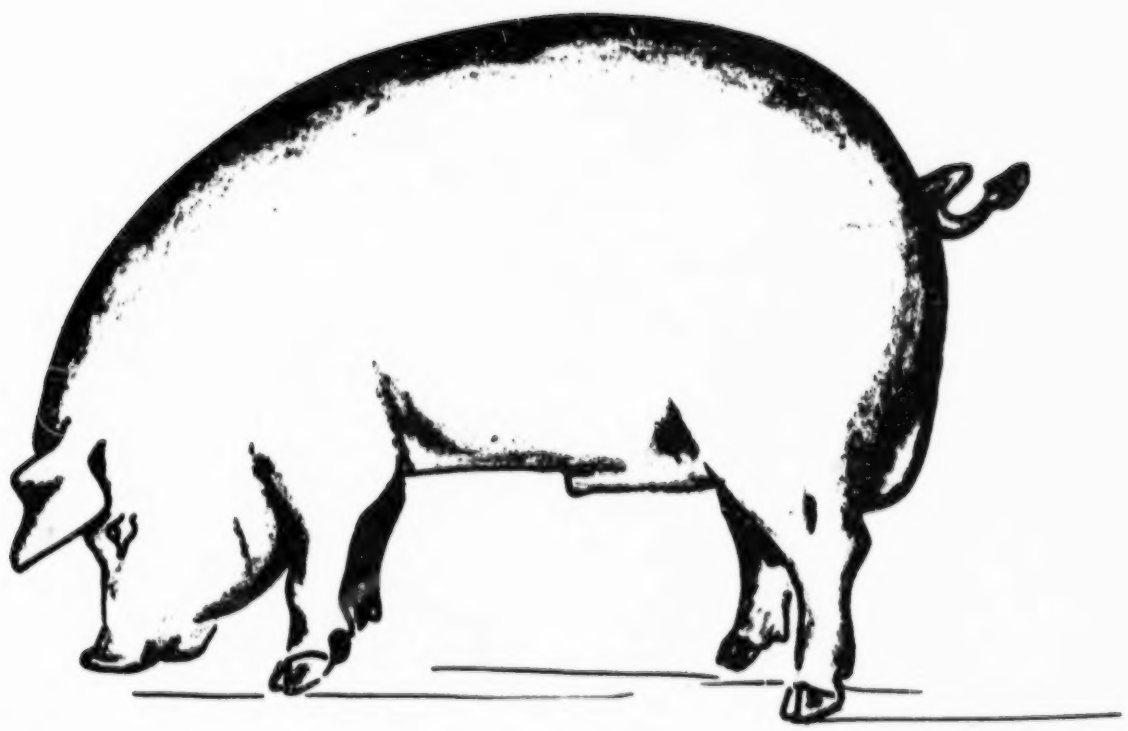
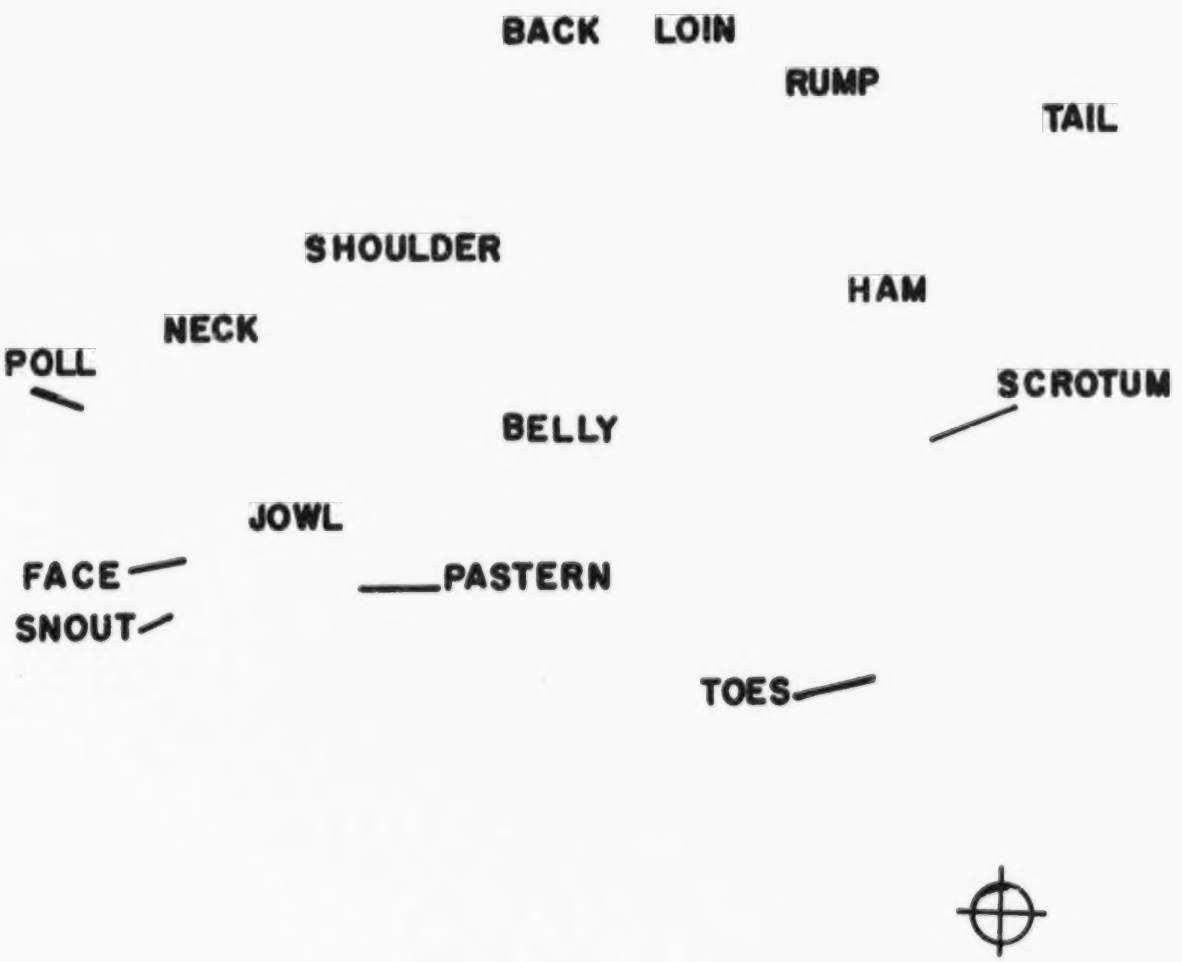


PARTS OF BOAR


BACK
LOIN
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SHOULDER
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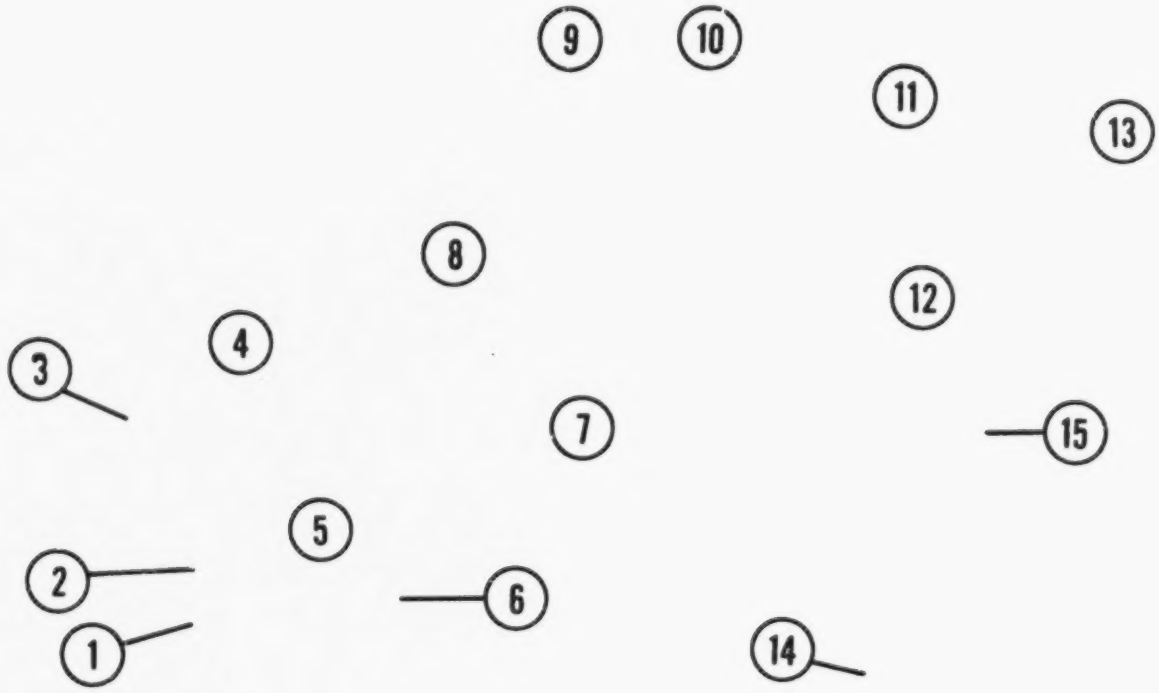
NECK
POLL
SCROTUM
BELLY
JOWL
FACE
PASTERN
SNOUT
TOES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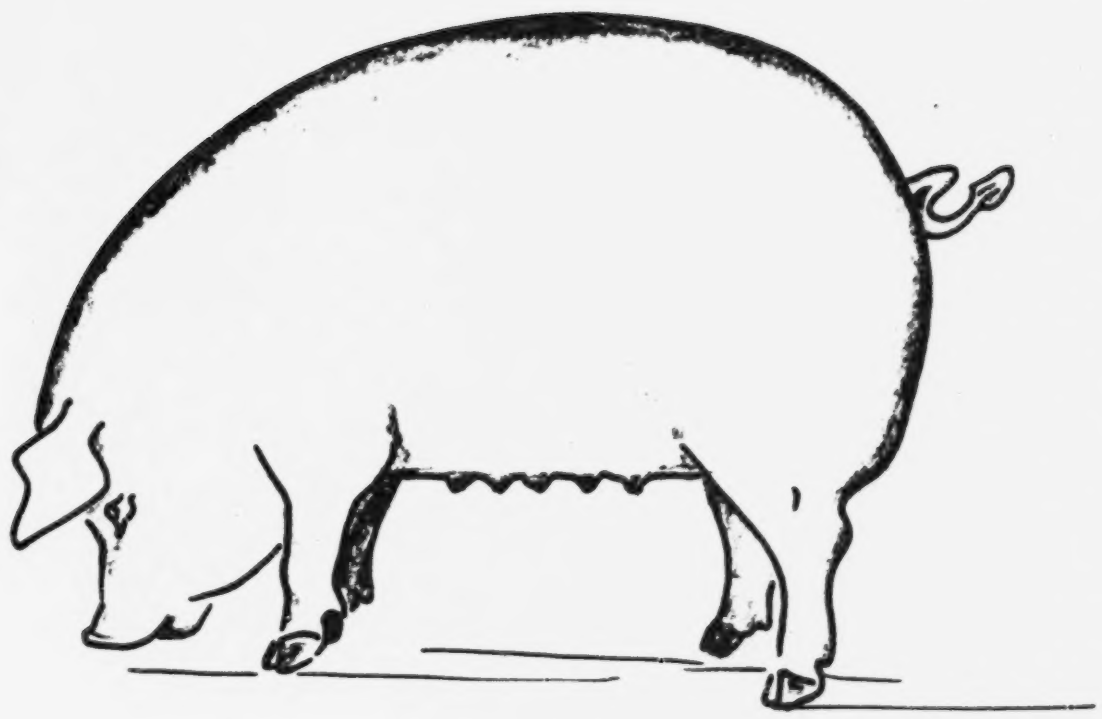

PARTS OF A SOW

BACK LOIN

RUMP

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HAM

NECK

POLL

BELLY

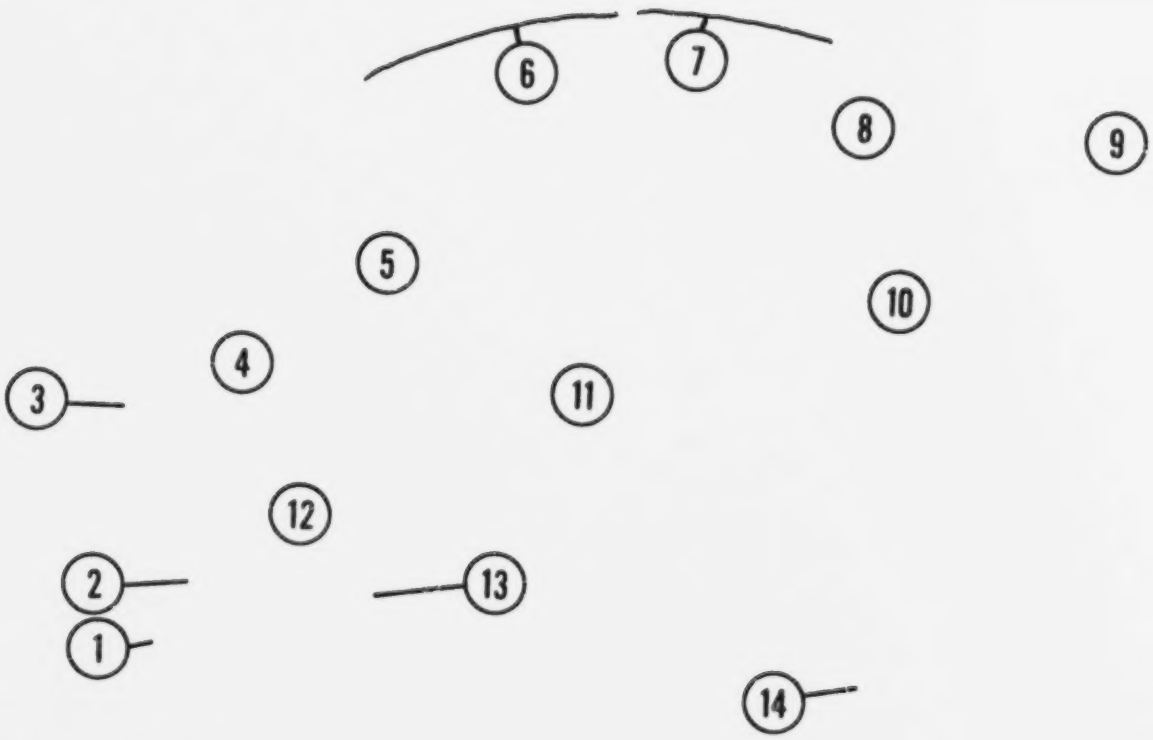
JOWL

FACE

PASTERN

S NOUT

TOES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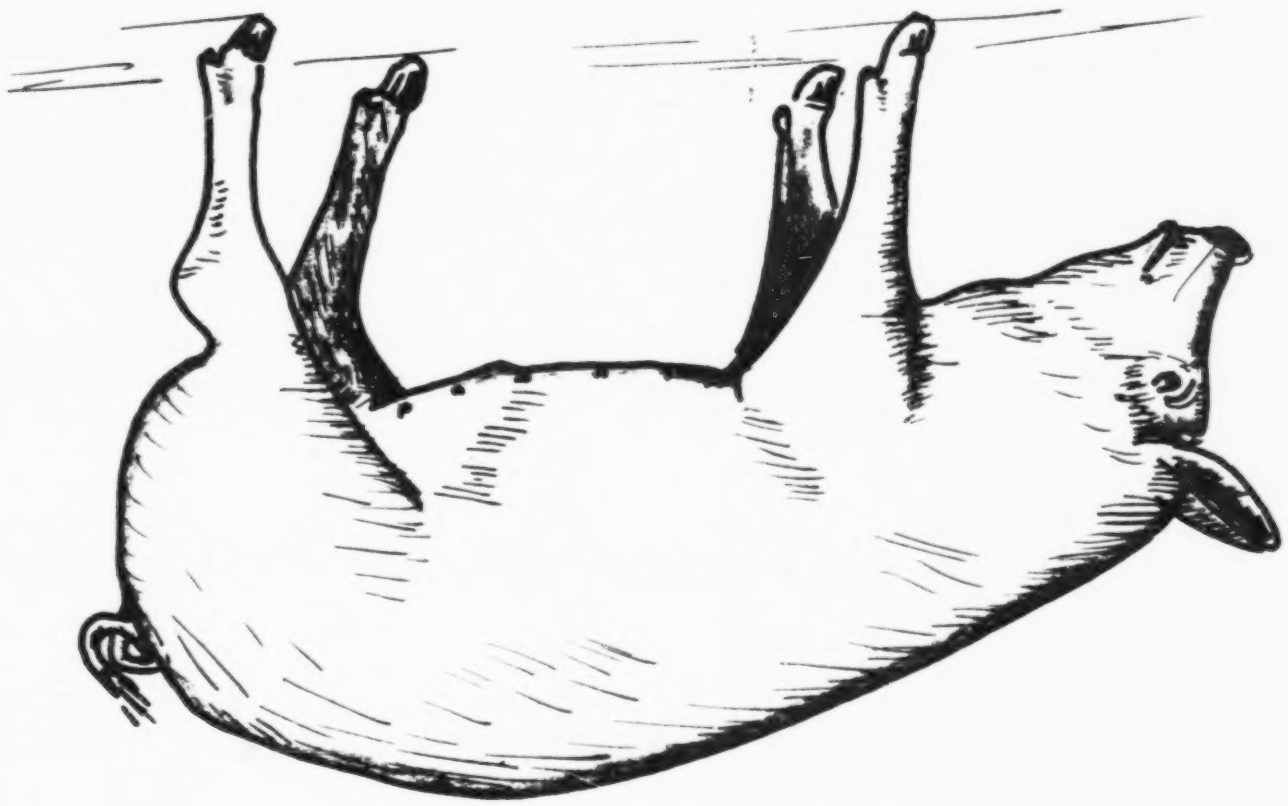
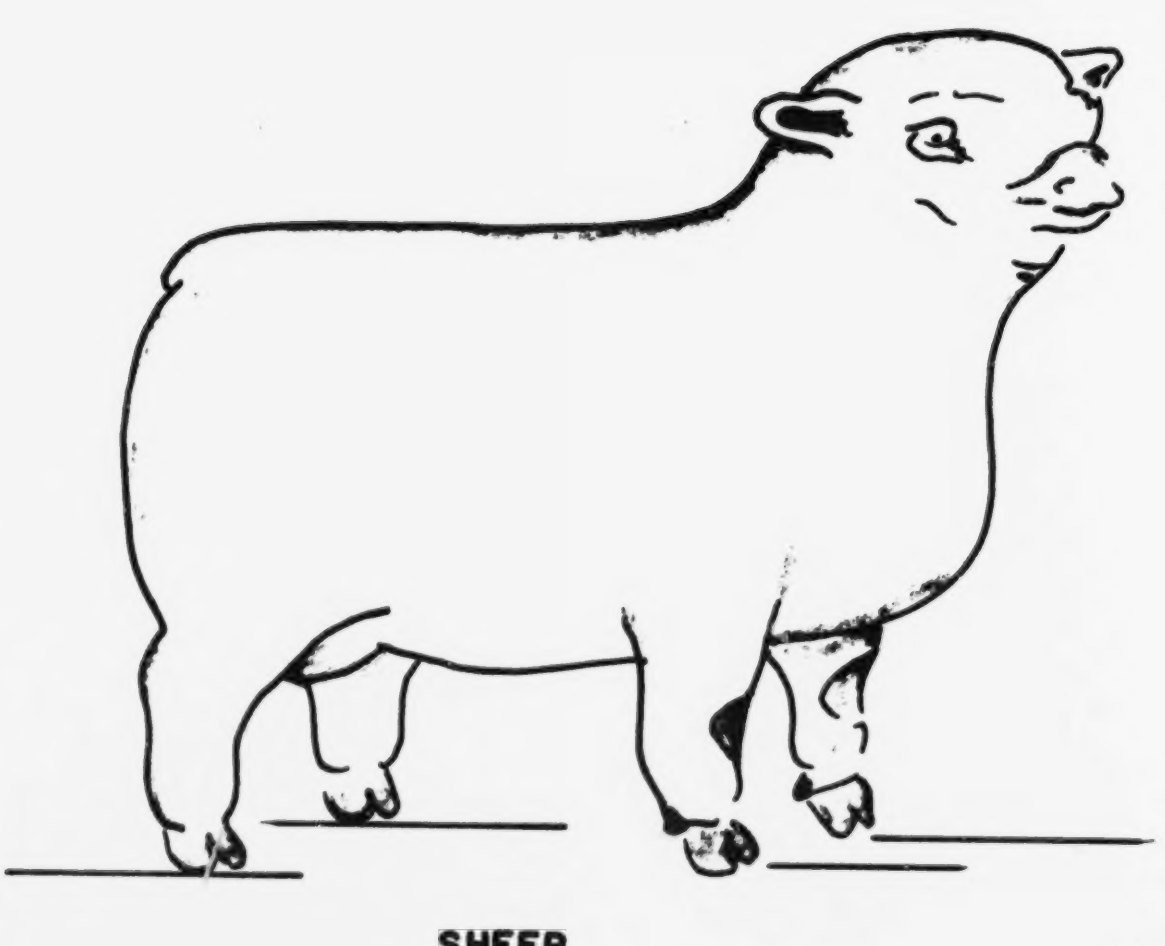
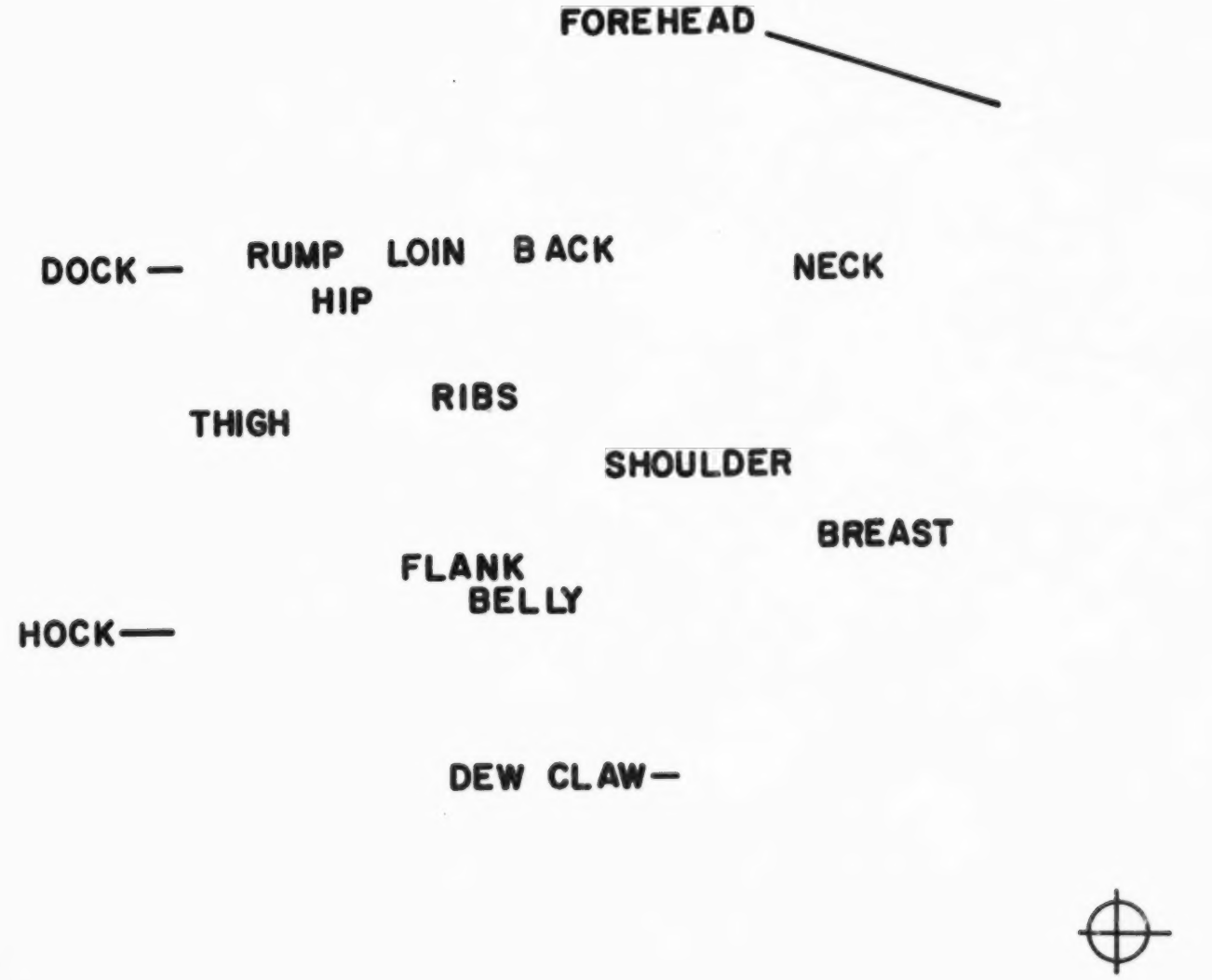


SELECTING PIGS



SHEEP


FOREHEAD
DOCK
RUMP
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THIGH
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HOCK
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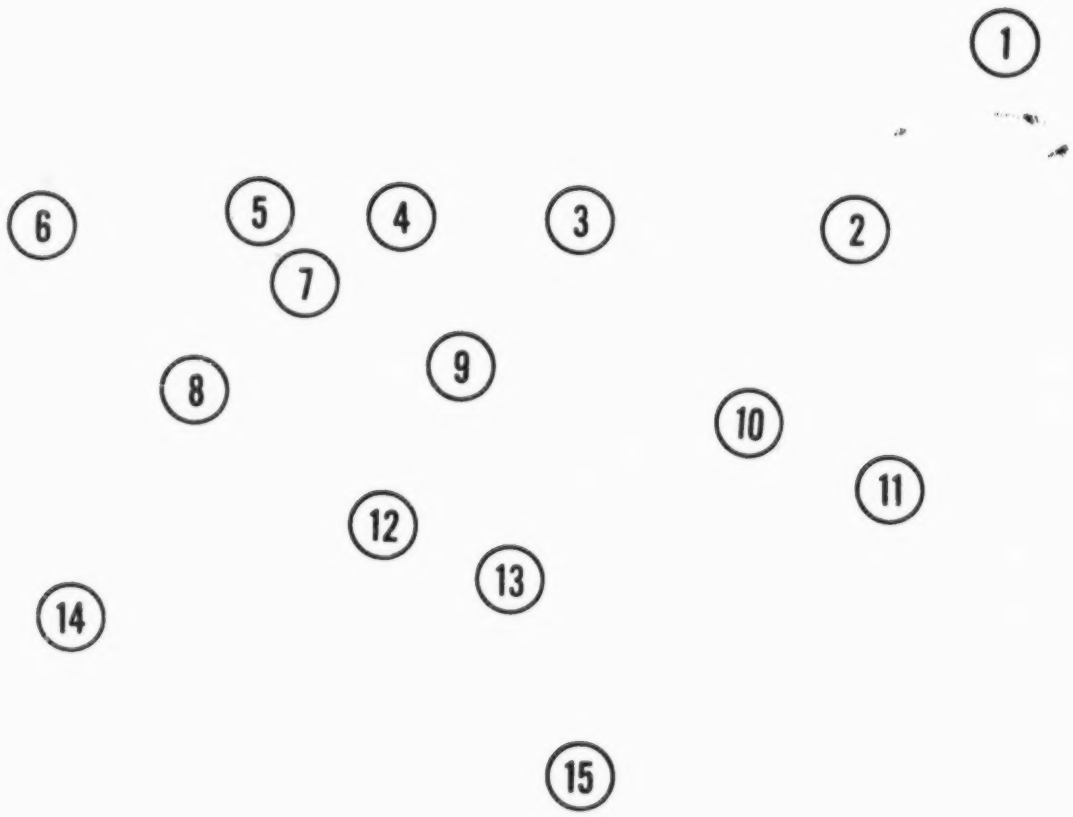
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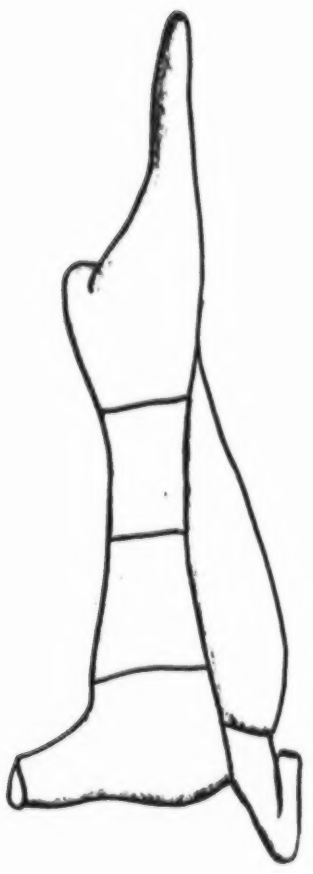


LAMB CARCASS

WHOLESALE
CUTS

LEG →

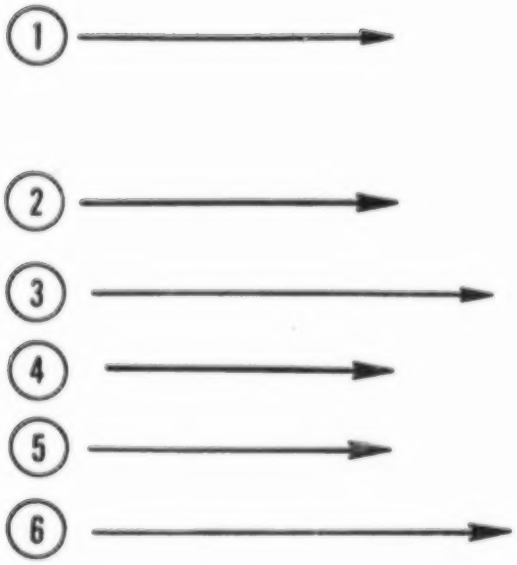
LOIN →

BREAST →

RACK →

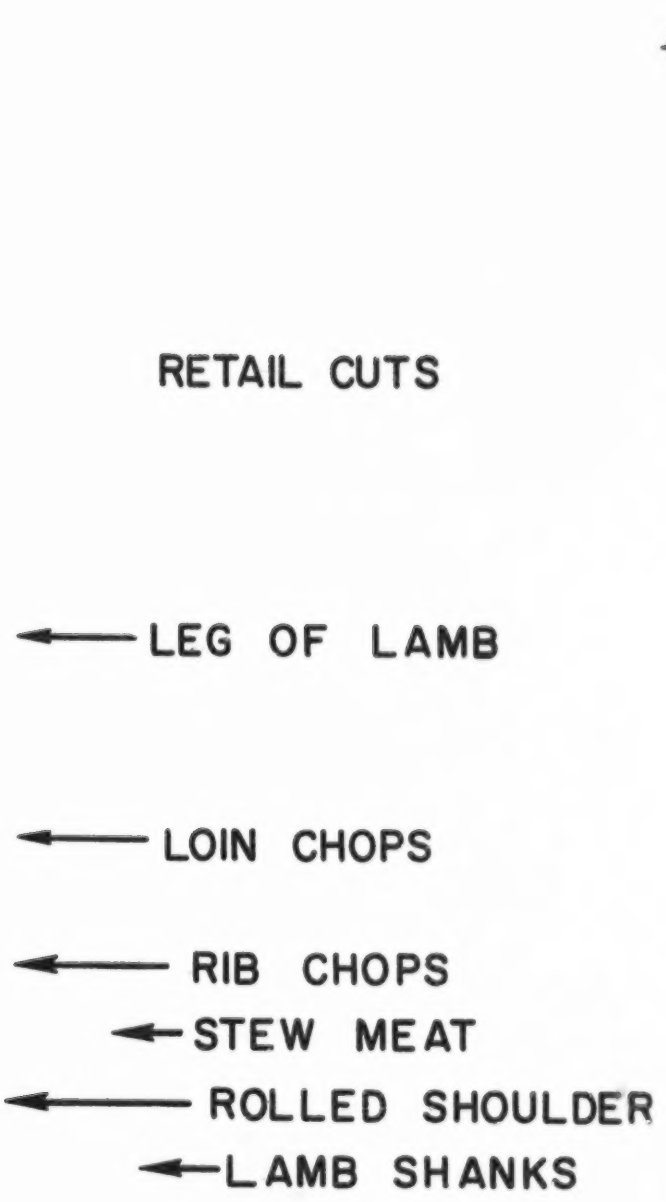
SHOULDER →

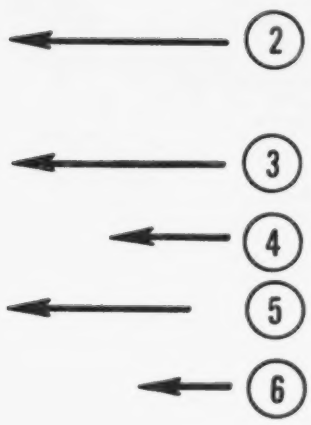
SHANK →



NAME THE WHOLESALE CUTS

RETAIL CUTS


LEG OF LAMB
LOIN CHOPS
RIB CHOPS
STEW MEAT
ROLLED SHOULDER
LAMB SHANKS



NAME THE RETAIL CUTS

BEEF CARCASS

WHOLESALE
CUTS

ROUND

RUMP

LOIN

FLANK

SHORT LOIN

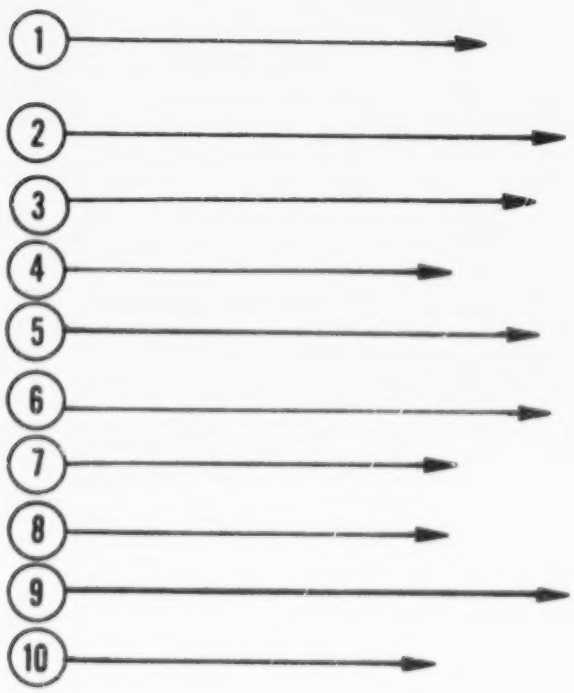
RIB

PLATE

BRISKET

CHUCK

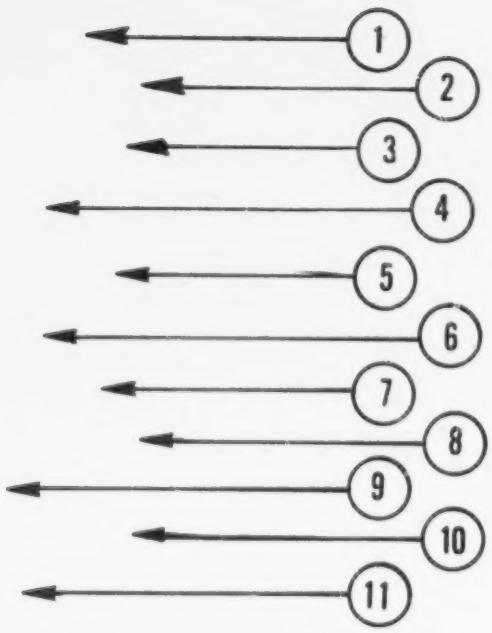
SHANK



NAME THE WHOLESALE CUTS

RETAIL
CUTS

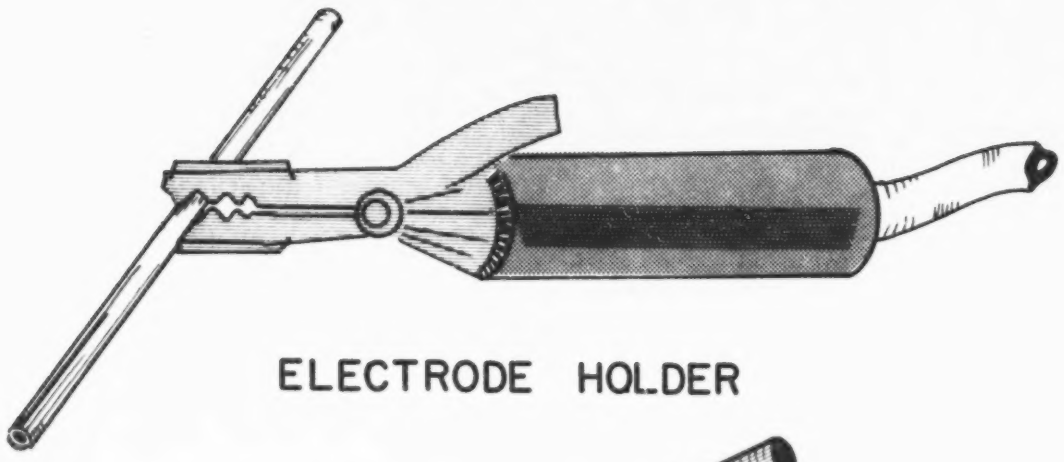
- ROUND STEAK
- RUMP
- SIRLOIN STEAK
- FLANK
- "T" BONE
- ROLLED PLATE
- SHORT RIBS
- RIB STEAK
- CORNED BEEF
- POT ROAST
- STEW



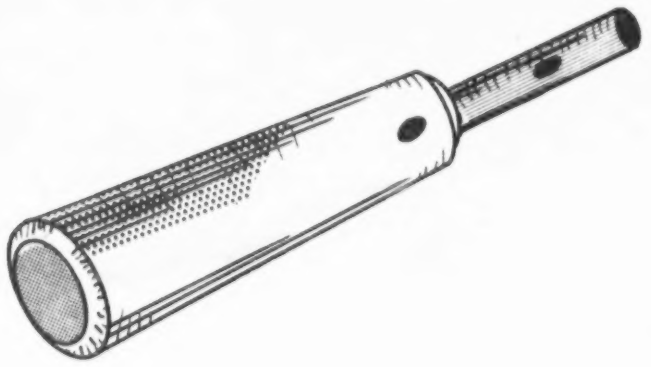
NAME THE RETAIL CUTS

No Page 35

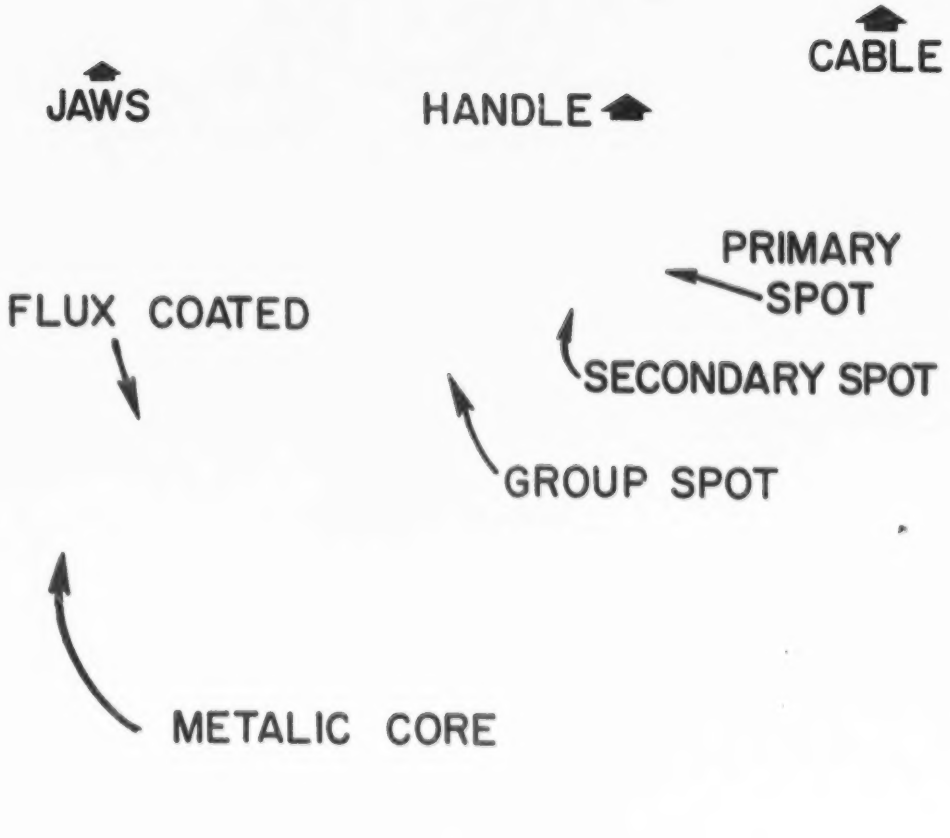
ARC WELDING (3)

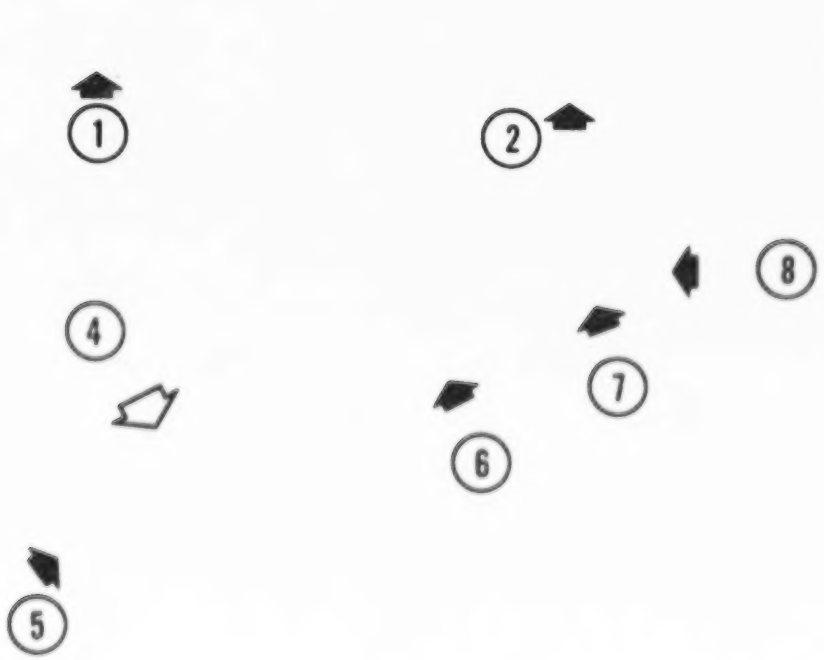


ELECTRODE HOLDER



ELECTRODE

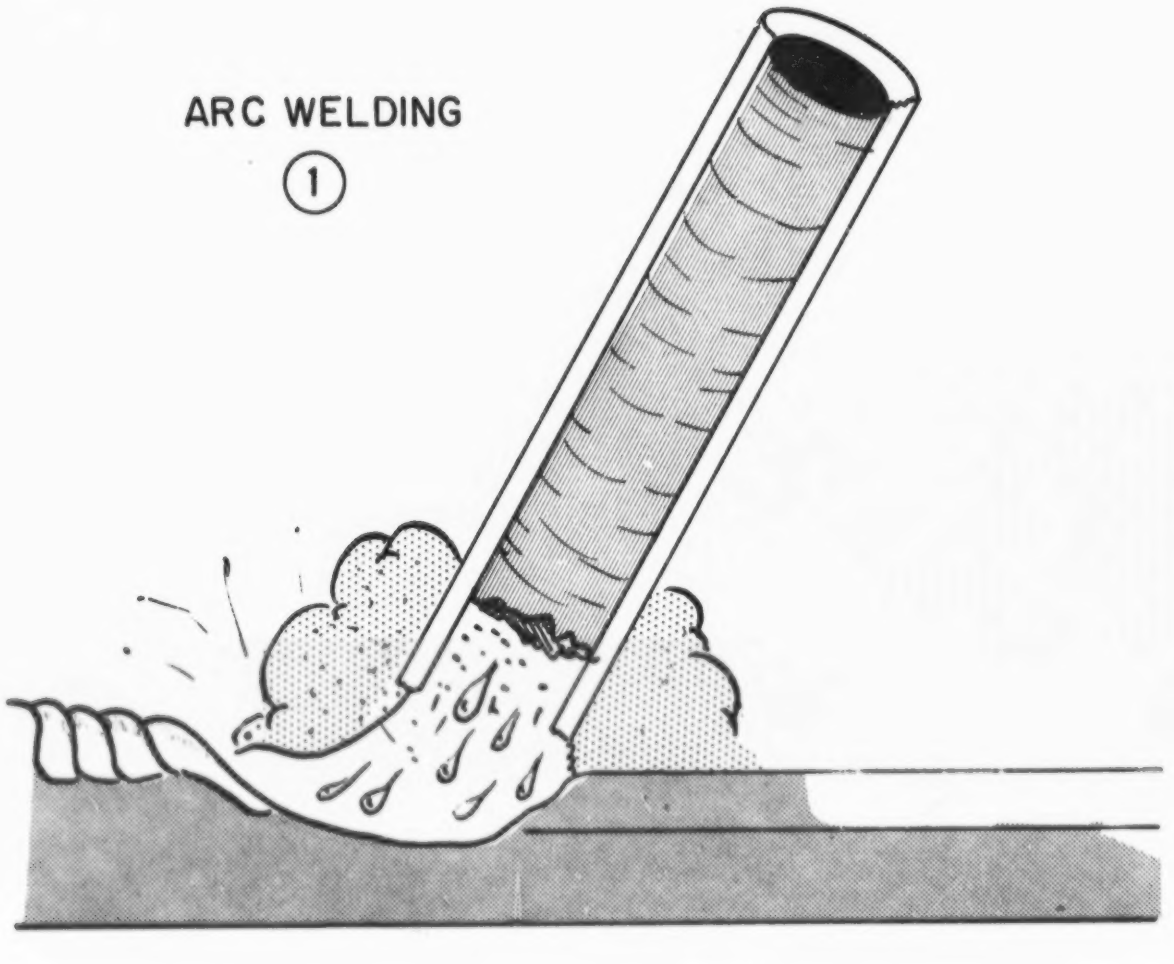

CABLE
JAWS
HANDLE
PRIMARY SPOT
FLUX COATED
SECONDARY SPOT
GROUP SPOT
METALIC CORE

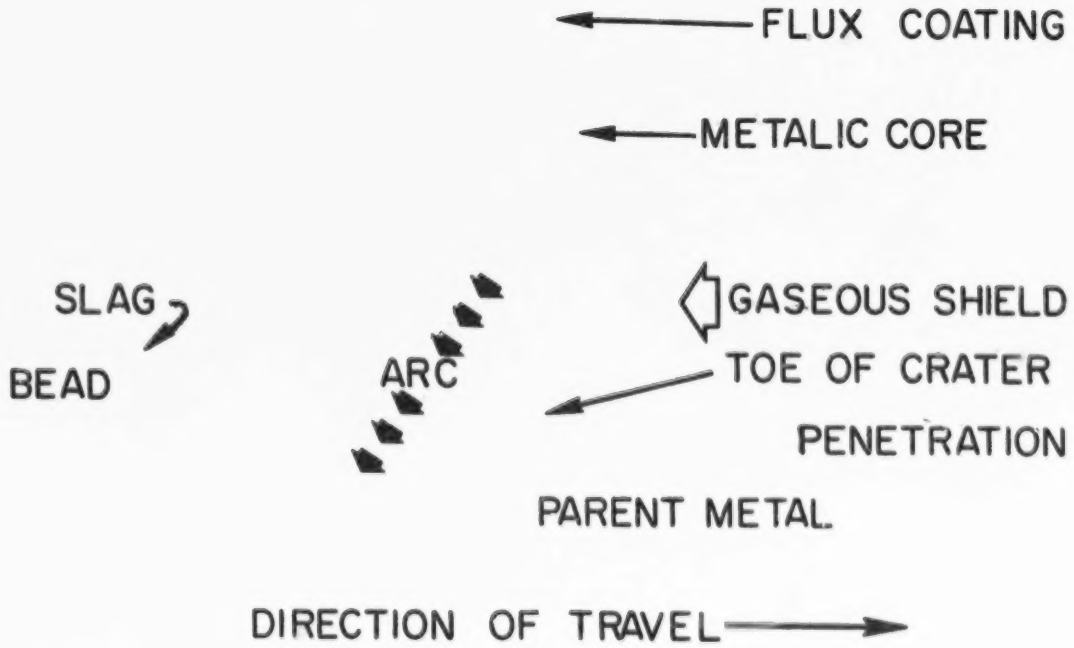


NAME THE PARTS

ARC WELDING

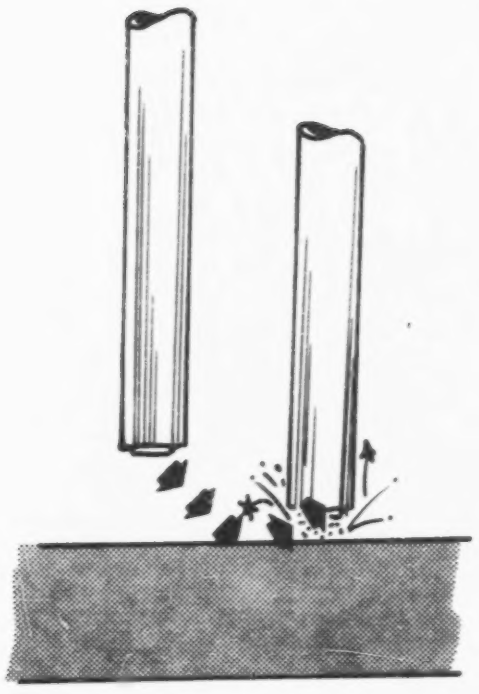
(1)



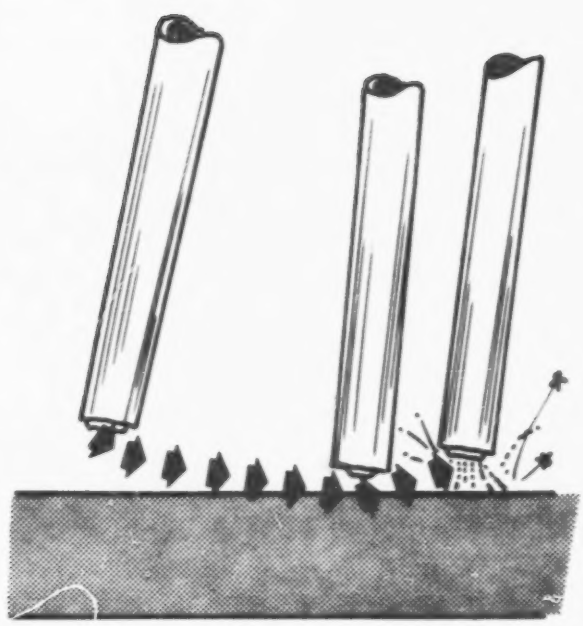

FLUX COATING
METALIC CORE
SLAG
BEAD
ARC
GASEOUS SHIELD
TOE OF CRATER
PENETRATION
PARENT METAL
DIRECTION OF TRAVEL

ARC WELDING

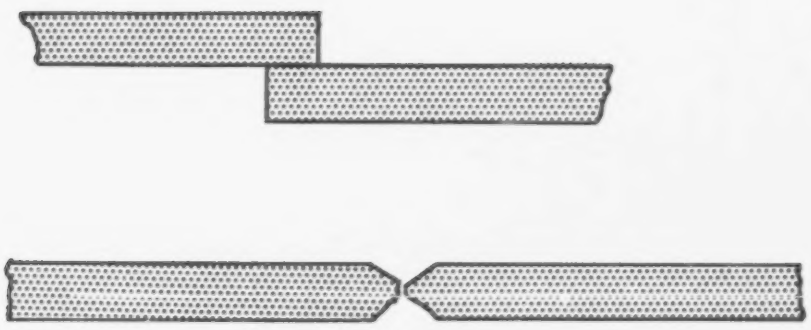
(2)



TAP START



SCRATCH START



WELDING JOINTS

LAP JOINT

BUTT JOINT

FILLET JOINT "T" JOINT

(1)

(2)

(3)

(4)

NAME THE JOINTS

WORK

GOOD or BAD

TRAITS DESIRED

ATTITUDES
INITIATIVE
WORK WITH OTHERS
TAKE CRITICISM
LOYALTY
SERVICE
ALL ATTRIBUTES OF GOOD CITIZENSHIP.....

LEGEND

- WASHINGTON STATE UNIVERSITY
  Headquarters Institute of Agricultural Sciences
  Agricultural Experiment Stations
  Agricultural Extension Service
  College of Agriculture
- ○ Outlying Agricultural Experiment Stations
- ■ Agricultural Extension Service County Offices
- ◉ Outlying Experiment Stations and Extension Service Units Combined
- ⚠ Columbia Basin Research Units of Irrigation Experiment Station (Nos 1 and 2)
- ⚠ Columbia View Plots of Tree Fruit Experiment Station

REFERENCES

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Katz, Elihu and Paul F. Lazarsfeld, Personal Influence. Free Press, 1955.

Sherif, Muzafer and Carl I. Hovland, Social Judgment. Yale University Press, 1961.

Zander, Alvin and Herman Medow, "Individual and Group Levels of Aspiration," Human Relations, 16:89-104, February 1963.

OE 6000 (9-66) DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON 25, D.C.

ERIC DOCUMENT RESUME

DATE OF RESUME: December, 1966

1. ACCESSION NO.	2. ERIC SATELLITE CODE	3. CLEARING HOUSE CONTROL NO.
4. SOURCE U.S. Dept. of Health, Education, and Welfare Office of Education, Bureau of Research Final Report (6/65 - 12/66)		
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6. AUTHOR(S) Magisos, Joel E., and Sleeth, Stanford		
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TYPE OF RELEASE

15. ABSTRACT (250 words max.)

The purpose of this project was to test effects of involving Vocational Agriculture Teachers in development and experimental use of instructional materials.

A group of 16 teachers at a summer workshop, participated in planning content and design for 13 overhead projection masters and made plans for using them experimentally. They also agreed to examine their instruction programs and to send the project director suggestions for content for other useful projection masters.

Fourteen of the 16 teachers are presently using the materials in experimental fashion. None have provided suggestions for development of other projection masters. Seven have signified a desire to attend another instructional materials development workshop.

16. RETRIEVAL TERMS (Continue on reverse)			
	Teacher involvement Overhead projection techniques Agricultural curriculum planning Visual aids, agriculture Teacher education, agriculture		
17. IDENTIFIERS			
Vo-Tech. Ed. R and D Project ERD-257-65			

Figure 3. ERIC Document Resume

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3. Entry must fit into space provided; if necessary use standardized abbreviation as cited by the American Psychological Association Publication Manual. (Publication Manual may be obtained from the American Psychological Association, Order Department, 1200 17th Street, NW., Washington, D.C. 20036.)

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Field 5. Title: Enter full document title. If document comprises only a portion of the total publication or release, refer to field #12. Include subtitles if they add significantly to information in the title proper.

Enter volume numbers or part numbers, where applicable, as an added entry following the title.

If the document has been identified with a project number, enter the project number as an added entry following the volume or part numbers.

Include the type of report (whether proposal, in-progress, final, follow-up) as an added entry following the project number, where applicable. Following the type of report, enter the inclusive dates covered by the report, by month and year. (Example: 1/63 - 7/65.)

Field 6. Author(s): Enter personal author(s) (corporate author is entered in field #1), last name first. (Example: Doe, John.) If two authors are given, enter both. In the case of three or more authors, list only the principal author followed by "and others," or, if no principal author has been designated, the first author given followed by "and others." (Example: Doe, John and others.)

Field 7. Date: Enter date of release of document by month and year. (Example: 12/65.)

Field 8. Pagination: Enter total number of pages of document, including illustrations, appendices, etc. (Example: 115 p.)

Field 9. References: Enter number of references cited in the bibliography of the document. (Example: 106 ref.)

Field 10. Report/Series No.: Enter any unique number assigned to the document by the publisher or corporate source. (Example: OE-53015; LX-135.) Do not enter project numbers; these are added entries field #5.

Also enter journal citations by name of journal, volume number, and pagination. (Example: NAEB Journal, v. II, pp. 52-73.) Do not include date; date is entered in field #7.

Field 11. Contract No.: If document has been supported by the U.S. Office of Education, enter the OE contract number.

Field 12. Publication Title: If document abstracted comprises only a portion of the total publication or release, enter complete title of publication. (Examples: Four Case Studies of Programmed Instruction; The Automation of School Information Systems.) For journal titles, spell out any abbreviations. (Example: National Association of Educational Broadcasters Journal.)

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Field 15. Abstract: Enter abstract of document, with a maximum of 250 words.

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16. RETRIEVAL TERMS (*Continued*)

GPO 908-451